

## REMARKS

Claims 6-25 are pending.

Applicant thanks the Examiner for entry and consideration of applicant's last Amendment and Response, and for acknowledging that *Lenz* and *Hekmatpour* either individually or taken in combination do not disclose the methods and apparatus of applicant's claims 6-25. Applicant also thanks the Examiner for withdrawal of the Examiner's 35 U.S.C. § 112 ¶2-based rejection. The Examiner has, nonetheless found and asserted new grounds of rejection.

*Examiner's Interview Summary.* Applicant thanks the Examiner for the telephonic interview of 08 March 2005, wherein applicant's agent queried the Examiner for the status of the application, and was informed that a response would be completed within two weeks.

Applicant acknowledges the Examiner's rejection of claims 6 and 15, under 35 U.S.C. § 101, in view of non-statutory subject matter. Applicant has responsively amended these claims to obviate this rejection.

Applicant acknowledges the Examiner's rejection of various claims, under 35 U.S.C. § 103(a), over *Altschuler* (4,872,122) in view of *Lawrence* (6,272,481), and further in view of *Ridgeway* (6,012,052). Applicant respectfully traverses these rejections, because *Altshchuler*, either alone or in combination with *Lawrence* or *Ridgeway*, does not describe, teach or otherwise suggest the instant inventive claimed subject matter, and rather explicitly and fundamentally *teaches away* from the present claim subject matter by teaching statistical inference engines and classic decision trees.

Various informalities relating to the specification (*e.g.*, Trademark usage, etc.), figures and claims have been addressed to obviate these objections by the Examiner.

No new matter has been added.

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## **FORMALITIES**

*Priority.* Applicant respectfully traverses the Examiner's assertion that the 06 January 2000 priority date of applicant's provisional application (60/175,106) should not be accorded to applicant's claims 10 and 19, based allegedly on an assertion that Algorithm 42 is not disclosed in the provisional application. Algorithm 42 is, in fact disclosed in 60/175,106. Specifically, it is the source code for algorithm 42 that is additionally disclosed in the instant application, but the algorithm was defined and described in 60/175,106. Therefore, claims 10 and 19 should be accorded the same priority as the rest of applicant's claims.

*Oath/Declaration.* Applicant's agent has provided the inventor with a supplemental Declaration in compliance with 37 C.F.R. § 1.67(a), and in view of the current amendments and will forward it to the office immediately upon receipt of the signed new Declaration.

*Drawings. Figure 7.* The Examiner's objection with respect to Figure 7 has been addressed by amendment of the brief description of Figure 7 to recite "(i.e., the values ranging between 10 and 95 listed in the columns labeled ACL tear, PCL tear and MM tear)." No further amendment of Figure 7 is deemed necessary, because the present amendment sufficiently clarifies the reference to the fuzzy primary bias value set.

*Figure 8.* The Examiner has maintained an objection to the specification in relation to recitation of "and simple as activators" (originally recited in the brief description of Figure 8 and on page 23). This phrase was deleted from the brief description of Figure 8, and was amended in applicant's last amendment to recite (at page 23) "and not simply as activators" to clarify the intended meaning. Applicant has further amended the text of this paragraph of page 23 (as amended herein above under "IN THE SPECIFICATION") to include "The user response value editor/window allows any user to establish personalized, graded responses. This unique and novel attribute of the present invention is significant, because the program uses the user responses values/rankings as modifiers of the expert-provided primary bias values, creating a more accurate decision (e.g., diagnosis)." Support for this text is explicitly found on page 26, third paragraph, and this text further clarifies the intended meaning of "and not simply as activators," because, it explains

that the user response value modifies the expert-provided primary bias value, and does not simply activate use of the primary bias value *per se*. Applicant respectfully contends that this further supported amendment sufficiently clarifies applicants intended meaning, and requests withdrawal of this specification objection. No new matter has been added.

*Figure 27.* The Examiner objected to Figure 27, in view of the absence of a “Replacement sheet” designation. Applicant has amended Figure 27, as described herein, to obviate this issue with respect to Figures 27. No new matter has been added.

*IDS references.* IDS references Tuban and McNeil were previously cited in applicant’s last supplementary IDS. Applicant herein resubmits the Supplementary IDS attached hereto, and provides copies of these references as requested by the Examiner.

*Claims 10 and 19.* The Examiner has suggested explicit recitation of the algorithm method steps in place of the current recitation of the term algorithm 42. Applicant respectfully traversed this rejection, based on the fact that algorithm 42, and steps thereof, are explicitly given and defined in the specification with sufficient clarity, and explicit recitation of these steps would thus serve no purpose in clarifying or further limiting the claims, which already stand so-limited.

Claim 21. Claim 21 has been amended to recite “least” in place “lease.”

### ***Rejection under 35 U.S.C. § 101***

Claims 6 and 15 have been rejected, under 35 U.S.C. § 101, in view of alleged non-statutory subject matter. Applicant has responsively amended these claims to obviate this rejection.

Specifically, claims 6 and 15 now recite “A computer implemented method for providing a ranked set of alternatives according to likelihood, comprising:” and further recite “to provide a ranked set of alternatives” in steps (c) and (e) of claims 6 and 15, respectively.

The amendments clarify that the method is computer implemented method for providing a ranked set of alternatives; such that the technology permits the function of the descriptive material to be realized.

Applicant, therefore, respectfully requests withdrawal of this 35 U.S.C. § 101-based rejection.

### ***Rejections under 35 U.S.C. § 103***

The Examiner has rejected claims 6-9, 11-14 and 24, under 35 U.S.C. § 103(a), as being obvious over ***Altschuler et al*** (U.S. Patent No. 4,872,122, 03 Oct., 1989) in view of ***Lawrence*** (U.S. Patent No. 6,272,481, filed 14 Sept. 1998).

Specifically, the Examiner states that Altschuler teaches a method for ranking a set of alternatives according to likelihood, comprising: (a) configuring...a set of alternatives, a query set...(citing column 3, ll. 42-54 of Altschuler), a set of primary bias values (citing the Abstract of Altschuler)...; (b) inputting a user's response to the query (citing Figure 1A, item 12 of Altschuler); and (c) ranking, using a software program (citing column 2, ll. 47-57 of Altschuler)..., the alternatives according to relative likelihood, based at least in part of the set of primary bias values (citing Fig. 6; column 10, ll. 24-44 of Altschuler). The Examiner further states that while Altschuler does not teach using a software program stored on the storage device that is operative with a processor of the computer, Lawrence et al. teaches using a software program stored on the storage device that is operative with a computer (citing Abstract; and Fig. 3 of Lawrence), and that it would have been obvious to one of ordinary skill in the relevant art to combine Altschuler with Lawrence to arrive at the presently claimed subject matter.

Applicant respectfully traverses this rejection, because a *prima facie* case of obviousness is not reasonably supported by these asserted references, alone or in combination. The system and method of Altschuler is ***fundamentally different*** than the present system and method, because Altschuler teaches and requires (see specification and claims): (a) a *statistical inference engine* using; (b) a classic *decision tree structure* comprising a set of linked nodes; (c) a computer generated *statistical data base* generated using chi square and Bayesian probability methods based on; (d) *multiple system-generated case simulations* to establish; (e) a probability tree for predicting an expert's path through the decision tree. The present system and method is fundamentally

different, and does not require these elements (a-e). Additionally, neither Altschuler nor Lawrence teach or suggest the presently recited expert-assigned primary bias values.

**Altschuler.** Specifically, Altschuler teaches having an expert (assisted by computer software) establish a “decision making structure.” Specifically, the decision making structure is based on initially constructing a classic ‘decision tree’ comprising a tree of “relational questions.” The expert establishes a “root question” (root node), enters the possible responses to the root question, then enters the subsequent linked questions for each possible response. When, in the decision tree, the response to a question is a terminus or output action, the expert enters the choice from among the alternate output actions. Each response in the tree may only be linked to one parent question. (col. 3, ll. 22-40).

Once an Expert creates his decision tree, he starts an adaptive “simulator” (software). Starting at the root question (node), and at each subsequent linked question (node) in the decision tree, the system asks the expert to evaluate a case (as set of data values). The data values for the root node are randomly generated, whereas the simulated data values presented in relation to subsequent linked nodes are *biased* (not in the sense of the present invention) to avoid data values that conflict with the preceding response to the linked question. The system (i.e., the software), using a chi square test, creates a *statistical data base* that determines whether a given variable is significant in the expert’s choice of responses to the questions, and the likelihood of an answer to a question (i.e., of the expert’s answer to a particular question based on the input data) is determined by the relative values of the products of the Bayesian probabilities of the significant input values for each possible outcome. Finally, after the outcome probabilities are calculated for each node of a simulated case, the probability tree is constructed. A “modifier or editor” of the system allows each expert to change his answers to reflect new developments in the field (col.3, line 45 through col. 4, line 69).

The decision tree can be interrogated by entering situation to be analyzed. The system, using the probability tree (the probability of the expert’s response at each node), can predict which path the expert will take through the decision tree to arrive at an output action.

In summary, Altschuler teaches an expert system for predicting an expert's decision. The system is based on: (a) an interactive *statistical inference engine* (col. 2, ll. 22-23) that is based on; (b) a *classic decision tree structure comprising a set of linked nodes* (e.g., questions); wherein (c) a computer generated *statistical data base* is generated using chi square and Bayesian probability methods based on; (d) statistical processing of *multiple system-generated case simulations* (simulated data sets), to determine what case data (input parameters) is used by an expert in making a decision at each node to take one path or another through the decision tree (i.e., what input parameters are considered by the expert in answer the expert's question at each node); and (e) to establish a *probability tree* that can be used to predict the expert's responses to a particular data set (input parameters).

**The instant invention.** By contrast, the instant invention does not require use of a non-human expert system inference engine, rules tables, etc, but represents a *novel form* of expert system designed to eliminate the need for classic inference engines and rules tables. Specifically, the present invention does not require, and is not based on a *statistical inference engine*. The present invention does not require, and is not based on a *classic decision tree structure comprising a set of linked nodes* (e.g., questions). The present invention does not require, and is not based on a computer generated *statistical data base* generated using chi square and Bayesian probability methods. The present invention does not require, and is not based on statistical processing of *multiple system-generated case simulations* (simulated data sets), to determine what case data (input parameters) is used by an expert in making a decision at each node to take one path or another through the decision tree (i.e., what input parameters are considered by the expert in answer the expert's question at each node). The present invention does not require, and is not based on a *probability tree*.

Additionally, Altschuler does not teach primary and secondary bias values as taught and required by the present invention. The instant bias values reflect at least one human expert's prior conception of the degree of predictive value of a query/response for a particular alternative relative to others; that is, bias values, are direct associations of human expert assigned values with the set of

alternatives. The only mention of *biasing* in Altschuler is in relation to the computer assisted adaptive simulator aspect where the computer biases (adapts) the random number generator to reflect the type of data that would be channeled through a particular branch of the decision tree (see col. 3, ll. 50-60). Therefore, not only are the questions of Altschuyler in the form/context of a classic decision tree (not the instant invention), but there is no direct association as in the instant sense between human expert and predictive value of a question (query), rather there is only an computer assisted statistical biasing of the type of input parameters (not questions) that would be used by a particular expert in answering the expert's question (different than input parameters). This is fundamentally different than the expert-assigned primary bias values of the present invention. The presently claimed subjected matter is, therefore, sufficiently distinguishable from Altschuler, alone or in combination, due to instant recitation of "and a set of primary bias values, wherein each primary bias value directly associates a particular query with a particular alternative of the set of alternatives, and reflects at least one human expert's prior conception of the degree of predictive value of the query for the particular alternative relative to others...." There is no teaching or assignment of such bias values in Altschuler, alone or in combination.

Significantly, Altschuler, alone or in combination, explicitly and fundamentally *teaches away* from the present claim subject matter by teaching the sole use of statistical inference engines and classic decision trees.

*Lawrence et al.* The Examiner asserts that Lawrence et al teach a software program stored on a storage device that is operative with a processor of the computer. However, the teachings of Lawrence are limited to a general purpose integrated medical computer system to facilitate administration and housekeeping functions by coordinating various types of databases (see, *e.g.*, Abstract), and does not provide the teachings necessary, alone or in combination with Altschuler to provide the present invention as described in the arguments above.

Applicant thanks the Examiner for the analysis of claims 7, 8, 9, 11, 12 and 13, 14 and 24 over Altschuler in view of Lawrence et al. and Ridgeway et al., but respectfully regards these additional assertions as *moot* in view of applicant's above arguments with respect to the

fundamental distinguishing required features/elements of Altschuler in comparison with the presently claimed subject matter.

Applicant, therefore, respectfully requests withdrawal of the Examiner's 35 U.S.C. § 103(a)-based rejection of claims 6-9, 11-14 and 24.

The Examiner additionally rejected claims 15-18, 20-23 and 25, under 35 U.S.C. § 103(a), as being obvious over *Altschuler*, in view of *Lawrence* and in further view of *Ridgeway et al* (US. Patent No. 6,012,052).

Specifically, the Examiner paraphrases the alleged teachings of Altschuler (as described herein above), and further states that: while Altschuler does not teach a method over a wide-area network, a plurality of electronic databases of a server, transmitting the user's response to the server over the wide-area network, a software program that is operative with a processor of the server, or transmitting the ranked set of alternatives to the user subsystem over the wide-area network whereby a set of alternatives is ranked according to likelihood;—*Lawrence et al* teach a plurality of electronic databases and a software program operative with a processor; and *Ridgeway et al* teach a method over a wide area network, transmitting the user's response to the server over the wide-area network, a database of a server and a software program that is operative with a processor of the server; and transmitting the ranked set of alternative to the user subsystem over the wide-area network, whereby the set of alternatives is ranked according to likelihood (citing Ridgeway at column 30, lines 64-67; column 31, lines 1-6) (see Office Action at pages 9-10). The Examiner further states that it would have been obvious to one of ordinary skill in the relevant art to combine the teachings of these references to arrive at the presently claimed invention.

Applicant respectfully traverses this rejection, because a *prima facie* case of obviousness is not reasonably supported by these asserted references, alone or in combination. As stated above, the system and method of Altschuler is *fundamentally* different than the present system and method, because Altschuler requires: (a) a *statistical inference engine* using; (b) a classic *decision tree structure* comprising a set of linked nodes; (c) a computer generated *statistical data base* generated



using chi square and Baynesian probability methods based on; (d) *multiple system-generated case simulations* to establish; (e) a probability tree for predicting an expert's path through the decision tree. The present system and methods do not require these elements (a-e). Additionally, neither Altschuler, Lawrence nor Ridgeway teach or suggest the presently recited expert-assigned primary bias values.

Altschuler and Lawrence are discussed above.

**Ridgeway.** The teachings of Ridgeway relate to internet content handling, and specifically to methods to optimize processing and/or data bus usage. Specifically, Ridgeway teaches optimization of processor and/or data bus resources by: (a) creating resource (*e.g.*, internet content) “transition probabilities” (by (i) counting the number of requests for each resource, (ii) counting the number of transitions (direct and indirect) between resources, and (iii) for each possible transition, dividing the number of transitions between resources by the number of requests for the starting resource) (col. 11, ll. 22-32); and (b) “pre-fetch processes” where, during times when a server has available processing (idle), the server loads resources into its resource cache based on the resource transition model and based on the resource(s) most recently used by the server (col. 29, ll. 57-66).

Ridgeway, alone or in combination with Altschuler or Lawrence, neither teaches or suggests the presently claimed invention that is not statistically driven inference engine based on classic decision tree structures. The instantly claimed subject matter is additionally distinguished by the present recitation of “and a set of primary bias values, wherein each primary bias value directly associates a particular query with a particular alternative of the set of alternatives, and reflects at least one human expert's prior conception of the degree of predictive value of the query for the particular alternative relative to others....” There is no teaching or assignment of such bias values in Altschuler, alone or in combination with Lawrence or Ridgeway.

Applicant thanks the Examiner for the analysis of claims 15,16, 17, 18, 21, 22, 23 and claim 25 over Altschuler in view of Lawrence et al. and Ridgeway et al., but respectfully regards these additional assertions as *moot* in view of applicant's above arguments with respect to the

fundamental distinguishing required features/elements of Altschuler in comparison with the presently claimed subject matter.

Again, Altschuler, alone or in combination, explicitly and fundamentally *teaches away* from the present claim subject matter by teaching the sole use of statistical inference engines and classic decision trees.

Applicant, therefore, respectfully requests withdrawal of the Examiner's 35 U.S.C. § 103(a)-based rejection of claims 15-18, 20-23 and 25.

The Examiner additionally rejected *dependent* claim 10, under 35 U.S.C. § 103(a), as being obvious over *Altschuler*, in view of *Lawrence*.

Specifically, the Examiner paraphrases the alleged teachings of Altschuler (as described herein above), and further states that: while Altschuler does not teach a software program stored on the storage device that is operative with a processor of the computer and generating secondary bias values, and ranking the alternatives by using algorithm 42;—Lawrence does teach using such a stored, operative software program; and further that generating secondary bias values, and ranking alternatives, at least in part by using algorithm 42 is conventional and well known (citing Islam et al U.S. Patent 6,115,712) (see Office Action at page 16). The Examiner further states that it would have been obvious to modify Altschuler as taught by Lawrence for the purpose of processing patient information, and to generate secondary bias values, and rank the alternatives by using algorithm 42.

Applicant respectfully traverses this rejection based on arguments that have been discussed in detail herein above with respect to the nature of limited teachings of Altschuler and Lawrence. Additionally, neither of these references, alone or in combination teach or suggest *primary bias values* as defined and taught in the present invention, and therefore, do not teach or suggest *secondary bias values*.

Applicant, therefore, respectfully requests withdrawal of this 35 U.S.C. § 103(a)-based rejection of *dependent* claim 10.

The Examiner additionally rejected *dependent* claim 19, under 35 U.S.C. § 103(a), as being obvious over *Altschuler*, in view of *Lawrence* and in further view of *Ridgeway et al.*

Specifically, the Examiner paraphrases the alleged teachings of Altschuler (as described herein above), and further states that: while Altschuler does not teach a method over a wide-area network, a plurality of electronic databases of a server, transmitting the user's reponse to the server over the wide-area network, a software program that is operative with a processor of the server, transmitting the ranked set of alternatives to the user subsystem over the wide-area network, whereby the set of alternatives is ranked according to likelihood and generating secondary bias values, and ranking the alternatives by algorithm 42;--Lawrence teaches a such an operative software program; and Ridgeway teaches a method over a wide-area network, transmitting the user's response to the server over a wide-area network, a database of a server and a software program operative with a processor thereof, transmitting the ranked set of alternatives to the user subsystem over the wide-area network, whereby the set of alternatives is ranked according to likelihood. The Examiner further takes notice that generating secondary bias values and ranking the alternatives using algorithm 42 is convention and well-know. The Examiner further states that is would have been obvious to modify Altschuler as taught by Lawrence and Ridgeway for the purpose of processing medical/patient information as well as better utilizing resources/communications bandwidth, and "to generate secondary bias values...."

Applicant respectfully traverses this rejection based on arguments that have been discussed in detail herein above with respect to the nature of limited teachings of Altschuler, Lawrence and Ridgeway. Additionally, none of these references, alone or in combination, teach or suggest *primary bias values* as defined and taught in the present invention, and therefore, do not teach or suggest *secondary bias values*.

Applicant, therefore, respectfully requests withdrawal of this 35 U.S.C. § 103(a)-based rejection of claim 19.

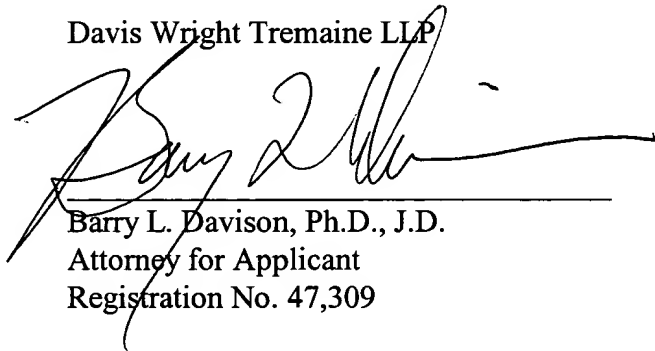
## CONCLUSION

In view of the foregoing amendments and remarks, applicant respectfully requests entry of the present Response and Amendment, and allowance of all claims 6-25 as provided and amended herein above.

The Examiner is encouraged to phone applicant's attorney, Barry L. Davison, to resolve any outstanding issues and expedite allowance of this application.

Respectfully submitted,

Davis Wright Tremaine LLP

A handwritten signature in black ink, appearing to read "Barry L. Davison", is written over a horizontal line. The signature is fluid and cursive.

Barry L. Davison, Ph.D., J.D.  
Attorney for Applicant  
Registration No. 47,309

Davis Wright Tremaine LLP  
2600 Century Square  
1501 Fourth Avenue  
Seattle, Washington 98101-1688  
Telephone: 206-628-7621  
Facsimile: 206-628-7699